

What is claimed is:

1. A method for mitigating P2P interferences, performed by a network system, comprising steps of:

5 (a) determining the redundant code group information, according to the code group usage information of the cell on which two UEs (User Equipments) attempting to establish P2P link camp and its adjacent cells;

(b) selecting a scrambling code from the redundant code group information and assigning it to the two UEs, so that the two UEs can perform scrambling operation on P2P signals to be transferred between the two UEs  
10 by using the scrambling code.

2. The method as claim 1, further comprising:

(i) measuring the relative position between said two UEs and each of other active UEs in communication state in the cell where said two UEs are camping and its adjacent cells;

15 (ii) if at least one of said two UEs causes radio interference with at least one of said active UEs according to the relative position, further determining whether said UE and said active UE are assigned in the same timeslot;

wherein said step (b) is executed if said UE and said active UE are assigned in the same timeslot.

3. The method as claim 2, wherein step (a) includes:

(a1) receiving the code group usage information of said camping cell and its adjacent cells transmitted by said two UEs;

(a2) determining said redundant code group information according to said code group usage information.

4. The method as claim 2, wherein step (a) includes:

determining the redundant code group information according to the code group usage information pre-assigned to said camping cell and its adjacent cells.

5. The method as claim 2, wherein step (i) includes:

detecting whether said two UEs fall within the radio range of each of said active UEs;

detecting whether each of said active UEs falls within the radio range of said two UEs.

6. The method as claim 2, further comprising:

(c) reclaiming said scrambling code when P2P communication ends.

7. A method for mitigating P2P interferences, performed by a UE (User Equipment), comprising steps of:

(A) acquiring the code group usage information of the cell where the UE

is camping through cell search procedure;

(B) reading the code group usage information of the adjacent cells through adjacent cell search procedure;

(C) sending the code group usage information of the cell where the UE is camping and its adjacent cells to a network system.

8. The method as claim 7, further comprising:

(D) receiving a scrambling code assigned by said network system, the scrambling code being assigned to the UE by said network system through selecting from the redundant code group information determined by said network system according to said code group usage information.

9. The method as claim 8, further comprising steps of:

(E1) performing scrambling operation on P2P signals to be sent by the UE by using said scrambling code;

(F1) sending the scrambled signals to another UE having established P2P link with the UE.

10. The method as claim 8 or 9, further comprising steps of:

(E2) receiving the scrambled P2P signals from another UE having established P2P link with the UE, wherein the scrambled P2P signals is scrambled by the another UE by using a scrambling code assigned by said

network system;

(F2) de-scrambling the scrambled P2P signals to obtain information from said another UE by using said scrambling code assigned to the UE.

11. A network system capable of mitigating P2P interferences,  
5 comprising:

a first determining unit, for determining the redundant code group information according to the code group usage information of the cell where two UEs attempting to establish P2P link are camping and its adjacent cells;

a selecting unit, for selecting a scrambling code from the redundant  
10 code group information and assigning it to the two UEs, so that the two UEs can perform scrambling operation by using the scrambling code on P2P signals to be transferred between the two UEs.

12. The network system as claim 11, further comprising:

a measuring unit, for measuring the relative position between said two  
15 UEs and each of other active UEs in communication state in the cell where said two UEs are camping and its adjacent cells;

a second determining unit, for when at least one of said two UEs causes radio interference with at least one of said active UEs, further determining whether said UE and said active UE are assigned in the same

timeslot according to the relative position;

said selecting unit, for selecting said scrambling code from said  
redundant code group information when the second determining unit  
determines that said UE and said active UE are assigned in the same  
5 timeslot.

13. The network system as claim 12, further comprising:

a receiving unit, for receiving the code group usage information of said  
camping cell and its adjacent cells transmitted by said two UEs;

said first determining unit, for determining said redundant code group  
10 information according to said code group usage information.

14. The network system as claim 12, wherein said first determining unit  
determines the redundant code group information according to the code  
group usage information pre-assigned for said camping cell and its adjacent  
cells.

15 15. The network system as claim 12, wherein said measuring unit, for  
measuring whether said two UEs fall within the radio range of each of said  
active UEs, and measuring whether each of said active UEs falls within the  
radio range of said two UEs.

16. A UE (User Equipment), comprising:

an acquiring unit, for acquiring the code group usage information of the cell where the UE is camping through cell search procedure;

a reading unit, for reading the code group usage information of the adjacent cells through adjacent cell search procedure;

5 a sending unit, for sending the code group usage information of the cell where the UE is camping and its adjacent cells to a network system.

17. The UE as claim 16, further comprising:

a receiving unit, for receiving a scrambling code assigned by said network system, the scrambling code being assigned to the UE by said network system through selecting from the redundant code group information determined by said network system according to said code group usage information.

18. The UE as claim 17, further comprising:

a scrambling unit, for performing scrambling operation on P2P signals to be sent by the UE by using the scrambling code;

said sending unit, for sending the scrambled signals to the other UE having established P2P link with the UE.

19. The UE as claim 17 or 18, wherein, said receiving unit receives scrambled P2P signals from another UE having established P2P link with the

UE, the scrambled P2P signals is scrambled by the another UE by using a scrambling code assigned by said network system; the UE further comprising:

- 5 a de-scrambling unit, for de-scrambling said scrambled P2P signals to obtain information from said another UE by using said scrambling code assigned to the UE.